## REMARKS

Claims 1-20 are pending. Claims 1, 5, 10, 14 and 15 have been amended. The specification has also been amended to correct a typographical error contained therein. Applicants respectfully request reconsideration of the application in response to the non-final Office Action.

## Claim Rejection – 35 U.S.C. §103(a)

Claims 1-20 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent Application Publication No. 2004/0167670 to Goncalves *et al.* ("Goncalves") in view of U.S. Patent No. 6,266,142 to Junkins et al. ("Junkins"). Applicants respectfully traverse the rejection for at least the following reasons.

As amended, claim 1 recites, among other features, "an image processing module for calculating image coordinates of at least one of the plurality of the light sources by detecting the light sources, controlled to flicker in response to the light source control signal, from an image signal obtained by a camera based on wavelength of each of the detected light sources." For example, the specification of the instant application teaches that, in one embodiment, "The image processing module 503 processes a signal to detect feature points of the specified light source, controlled to flicker via the communications module 502, from an image signal obtained by a camera. The image processing module 503 includes a camera (not shown) equipped with a filter for filtering the image signal based on the wavelength of light sources, and a signal processing unit (not shown) for detecting feature points corresponding to the wavelength of the light sources from the image

signal filtered by the camera, and for extracting the coordinates of the detected feature points (hereinafter referred to as 'image coordinates')." (Specification at page 7, lines 2-7). The image signal filtered using the wavelength can then be processed using thresholding and grouping and labeling techniques to extract the image coordinates. (See, Specification at page 7, lines 8-17).

Applicants respectfully disagree with the Office's assertion that Goncalves teaches "the camera detects the wavelength of the light source." (Office action at page 3, lines 19-20). Rather, Goncalves describes a robot that includes a visual sensor, an example of which is a digital camera. (Goncalves at [0055]-[0056]). The visual sensor is used to visually recognize landmarks to determine global position. (Goncalves at [0058]). Goncalves further describes that as the robot travels through its environment, it detects new physical landmarks, extracts 3-D features from the physical landmark, and determines displacements or positions from the robot to the respective features of the observed landmark. (See, Goncalves at [0083]-[0084]). Nowhere does Goncalves describe "calculating image coordinates of at least one of the plurality of the light sources by detecting the light sources, controlled to flicker in response to the light source control signal, from an image signal obtained by a camera based on wavelength of each of the detected light sources," as recited in claim 1, as amended.

Further, Applicants submit that Junkins does not supply the teachings missing from Goncalves. Junkins describes light beacons disposed on a first object and an electro-optical sensor disposed on a second object, where incident light energy from a beacon is measured as respective currents at leads or connections coupled to the electro-optical sensor, from which a rotational and

translation movement of the second object relative to the first object can be determined. (See, <u>Junkins</u> at col. 4, lines 9-26). That is, comparison of the currents flowing through the corresponding connections of the sensor can be used to determine the centroid location of the incident light, where the closer the incident light centroid is to a particular sensor connection, the larger the portion of current that flows through that connection. (See, <u>Junkins</u> at col. 4, lines 26-32). Nowhere does <u>Junkins</u> describe "calculating image coordinates of at least one of the plurality of the light sources by detecting the light sources, controlled to flicker in response to the light source control signal, from an image signal obtained by a camera based on wavelength of each of the detected light sources," as recited in claim 1, as amended.

Thus, no combination of <u>Goncalves</u> and <u>Junkins</u> teaches or suggests a mobile robot that includes "an image processing module for calculating image coordinates of at least one of the plurality of the light sources by detecting the light sources, controlled to flicker in response to the light source control signal, from an image signal obtained by a camera <u>based on wavelength of each of the detected light sources</u>," as recited in independent claim 1, as amended (emphasis added). Accordingly, Applicants submit that independent claim 1 is patentable over <u>Goncalves</u> and <u>Junkins</u> and respectfully request that the rejection under 35 U.S.C. §103(a) of claim 1, and of claims 2-4, which depend therefrom, respectively, be withdrawn. For reasons analogous to those presented for claim 1, Applicants submit that claims 5 and 15 are also patentable over <u>Goncalves</u> and <u>Junkins</u>, and respectfully request that the rejection under 35 U.S.C. §103(a) of claims 5 and 15, and of claims 6-14 and 16-20, which depend therefrom, respectively, be withdrawn.
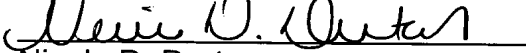
## Conclusion

It is believed that this Amendment does not require additional fees. However, if additional fees are required for any reason, please charge Deposit Account No. 02-4800 the necessary amount.

In the event that there are any questions concerning this paper, or the application in general, the Examiner is respectfully urged to telephone Applicants' undersigned representative so that prosecution of the application may be expedited.

Respectfully submitted,

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